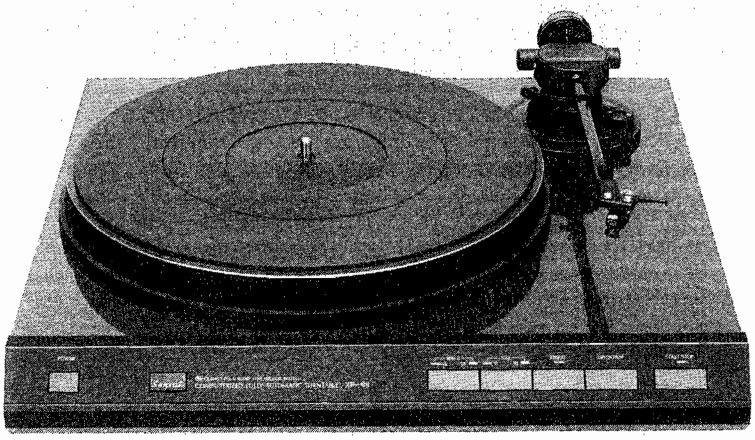
121

SERVICE MANUAL

SILENT SYNCHROTOR SYSTEM
COMPUTERIZED FULLY AUTOMATIC TURNTABLE

SANSUI XP-99



CAUTION

1. Parts identified by the ⚠ symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

Sansui

SANSUI ELECTRIC CO., LTD.

•SPECIFICATIONS

Type	Direct-drive turntable
Rated speeds	33-1/3, 45 rpm
Platter	Aluminum alloy diecast, 308 mm (12-1/8") diameter, 1.5 kg (3.3 lbs.) weight
Motor	Coreless and Brushless DC/ Quartz PLL Servo
Wow/flutter	0.012% (WRMS)
Signal-to-noise ratio	Better than 78 dB (DIN-B) Better than 66 dB (IEC-B)
Tonearm	Statically-balanced type
Effective tonearm length	230 mm (9-1/16")
Power voltage	110 ~ 120V/220 ~ 240V (50/60 Hz)
For U.S.A. and Canada	120 V (60 Hz)
Power consumption	15W
Dimensions	430 mm (16-15/16") W 170 mm (6-11/16") H 418 mm (16-15/32") D
Weight	8.9 kg (19.6 lbs.) net 10.7 kg (23.5 lbs.) packed

Specifications of the cartridge (applicable only to the units with cartridge)

Model AT-3100S

Type	MC (Moving Coil) type
Output voltage	0.4 mV (1,000 Hz, 35.4 mm/sec)
Correct load impedance	100 ohms
Frequency response	20 ~ 23,000 Hz
Tracking force	1.7 ±0.3g
Stylus	0.5 mil diamond stylus (ATN-3100S replacement stylus)

* Design and specifications subject to change without notice for improvements.

121

CAUTION

1. The symbols, UL, CSA, SA, BS, UK, EU, AS and XX on the parts list and the schematic diagram mean followings respectively.

   UL........................ Manufactured for U.S.A market.
   (Underwriters Laboratories approved model.)
   CSA..................... Manufactured for Canadian market.
   SA........................ Manufactured for South African market.
   BS, UK .... Manufactured for United Kingdom market.
   EU .... Manufactured for European market.
   AS........................ Manufactured for Australian market.
   XX........................ Standard Version.
   NON MARK........ Common Parts.

2. Some printed circuit boards are not supplied as the assembled. To separate these in this service manual, the stock No's are not indicated at the ends of the board names. However, the individual parts on the circuit boards are provided by orders.

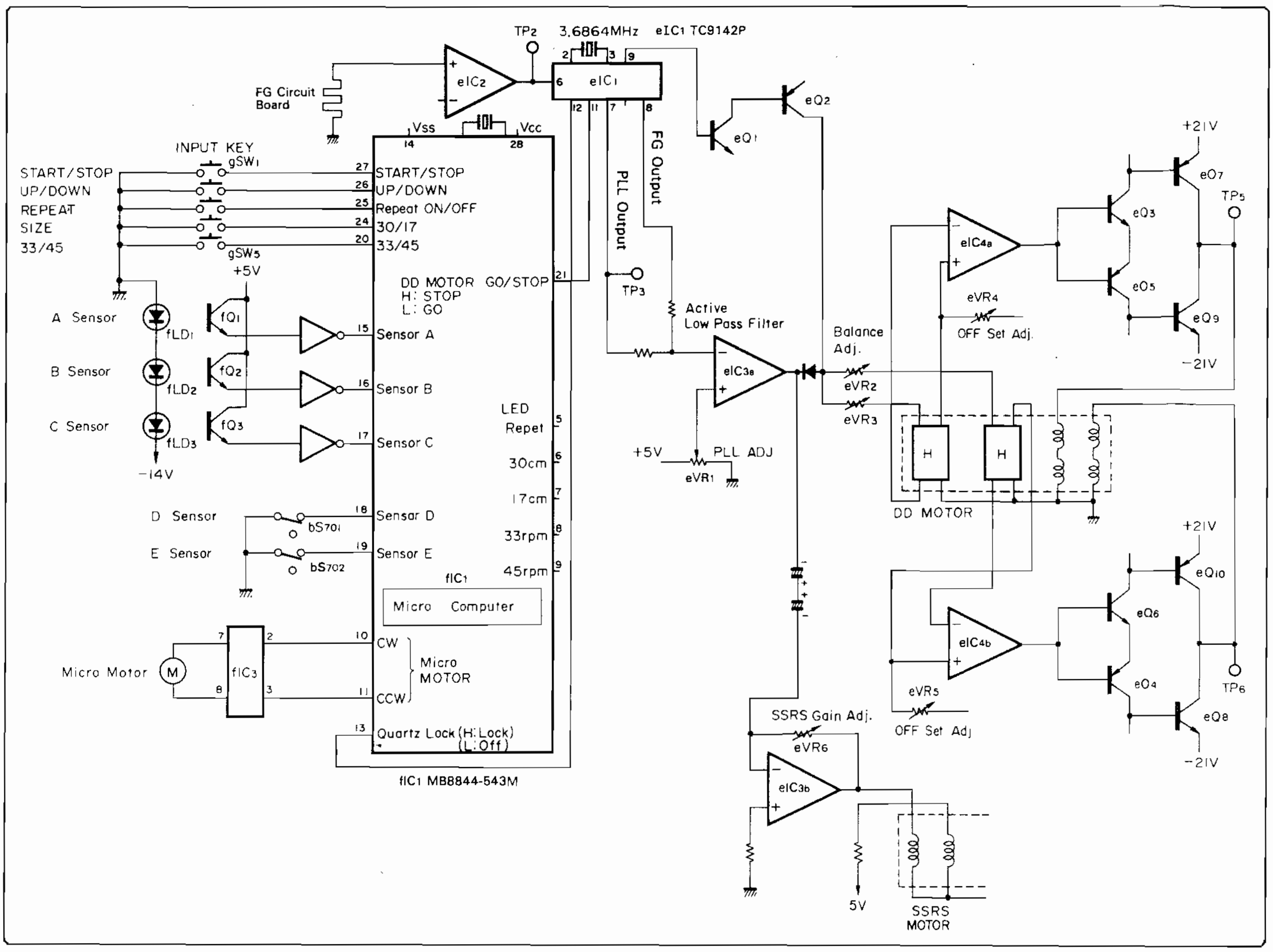
3. Since some of capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors & resistors, which was issued on February 1983.

4. Abbreviations in this service manual are as follows.

•Abbreviations List

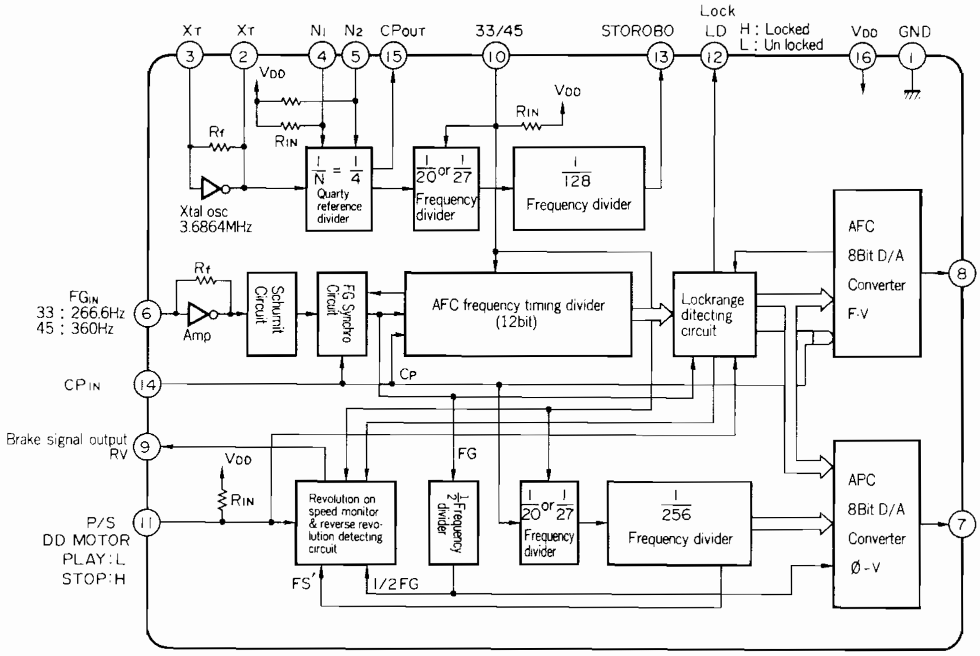
C.R. : Carbon Resistor
S.R. : Solid Resistor
Ce.R. : Cement Resistor
M.R. : Metal Film Resistor
F.R. : Fusing Resistor
N.I.R. : Non-Inflammable Resistor
A.R. : Array Resistor
C.C. : Ceramic Capacitor
C.T. : Ceramic Capacitor, Temperature Compensation
E.C. : Electrolytic Capacitor
E.L. : Low Leak Electrolytic Capacitor
E.B. : Bi-Polar Electrolytic Capacitor
E.B.L. : Low Leak Bi-Polar Electrolytic Capacitor
Ta.C. : Tantalum Capacitor
F.C. : Film Capacitor
M.P. : Metalized Paper Capacitor
P.C. : Polystyrene Capacitor
G.C. : Gimmic Capacitor
A.C. : Array Capacitor
V.R. : Variable Resistor
S.V.R. : Semi Variable Resistor
SW. : Switch
Chip R. : Chip Resistor
Chip C. : Chip Capacitor

1. BLOCK DIAGRAM


TP2
3.6864MHz
eIC1 TC9142P
eIC2
eIC1
FG Circuit Board
FG Output
PLL Output
TP3
eQ1
eQ2
INPUT KEY
gSW1
gSW5
START/STOP
UP/DOWN
REPEAT
SIZE
33/45
+5V
Vss
Vcc
START/STOP
UP/DOWN
Repeat ON/OFF
30/17
33/45
DD MOTOR GO/STOP
H: STOP
L: GO
A Sensor
B Sensor
C Sensor
fLD1
fLD2
fLD3
fQ1
fQ2
fQ3
-14V
Sensor A
Sensor B
Sensor C
LED
Repet
30cm
17cm
33rpm
45rpm
D Sensor
E Sensor
bS701
bS702
Sensor D
Sensor E
fIC1
Micro Computer
Micro Motor
fIC3
CW
CCW
Micro MOTOR
Quartz Lock (H: Lock)
(L: Off)
fIC1 MB8844-543M
Active Low Pass Filter
eIC3a
+5V
PLL ADJ
eVR1
Balance Adj.
eVR2
eVR3
eIC4a
eVR4
OFF Set Adj.
+21V
-21V
eQ3
eQ5
eQ7
eQ9
TP5
DD MOTOR
H
eIC4b
eVR5
OFF Set Adj
eQ4
eQ6
eQ8
eQ10
TP6
SSRS Gain Adj.
eVR6
eIC3b
5V
SSRS MOTOR

•See XR-Q7 Service Manual for operations of the microcomputer MB8844-543M and its peripheral circuits.

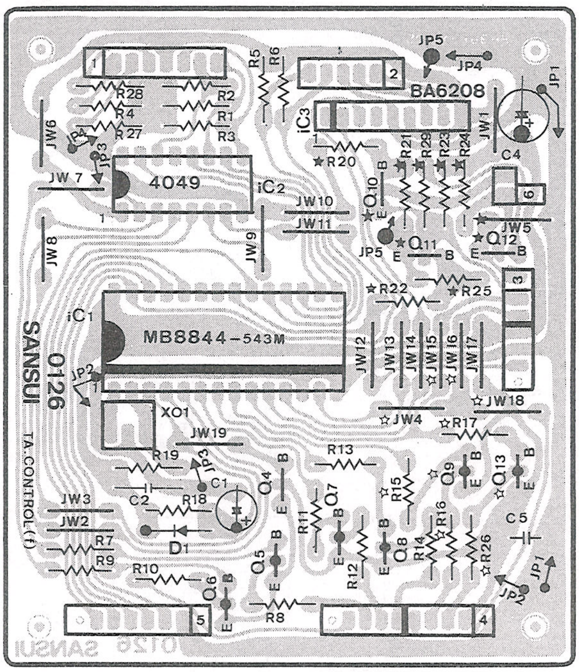
•Interior Block Diagram of TC9142P


XT
XT
N1
N2
CPOUT
33/45
STOROBO
Lock LD
H: Locked
L: Un locked
VDD
GND
VDD
RIN
Rf
Xtal osc 3.6864MHz
1/N = 1/4 Quarty reference divider
1/20 or 1/27 Frequency divider
1/128 Frequency divider
AFC 8Bit D/A Converter F-V
FGIN
33 : 266.6Hz
45 : 360Hz
Amp
Schmit Circuit
FG Synchro Circuit
AFC frequency timing divider (12bit)
Lockrange ditecting circuit
CP
CPIN
Brake signal output RV
P/S
DD MOTOR
PLAY: L
STOP: H
Revolution on speed monitor & reverse revolution detecting circuit
1/2 Frequency divider
FG
1/20 or 1/27 Frequency divider
1/256 Frequency divider
APC 8Bit D/A Converter Ø-V
FS'
1/2FG

2. PARTS LOCATION & PARTS LIST

2-1. S-0126 T.A. Control Circuit Board (Stock No. 13182601)

Component Side

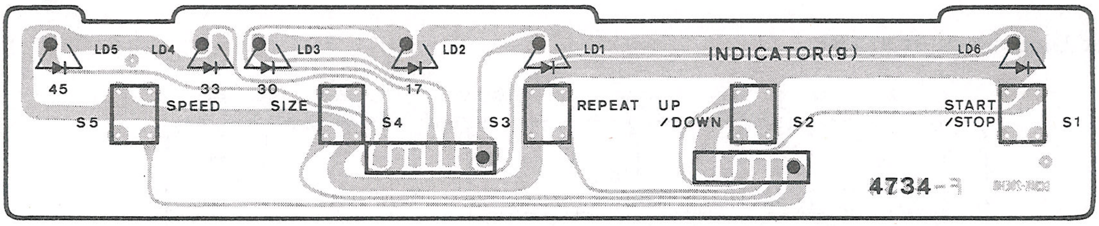

JP5
JP4
JP1
BA6208
iC3
R5
R6
R28
R2
R4
R1
R27
R3
JW6
JP3
JW7
4049
iC2
R20
R21
R29
R23
R24
JW1
C4
JW10
JW11
Q10
Q11
Q12
JW5
JW8
JW9
R22
R25
iC1
MB8844-543M
SANSUI
0126
T.A.CONTROL(f)
JP2
JW12
JW13
JW14
JW15
JW16
JW17
JW18
XO1
JW4
R17
JW19
R13
R19
C1
Q4
Q7
R15
Q9
Q13
C2
R18
JW3
JW2
R7
R9
D1
R11
R16
C5
Q5
R12
Q8
R14
R26
R10
Q6
R8
5
4
1
2
3
6

Parts List

Parts No.	Stock No.	Description
fX01	46149200	Ceramic Osc Element 3.58 MHz
•Transistor		
fQ4	46367101	2SC2603
	or 46367301	2SC2458
	or 46367501	2SC945A
fQ5	46367001	2SA1115
	or 46367201	2SA1048
	or 46367401	2SA733A
fQ6	46367001	2SA1115
	or 46367201	2SA1048
	or 46367401	2SA733A
fQ7	46367001	2SA1115
	or 46367201	2SA1048
	or 46367401	2SA733A
fQ8	46367001	2SA1115
	or 46367201	2SA1048
	or 46367401	2SA633A
fQ9	46367001	2SA1115
	or 46367201	2SA1048
	or 46367401	2SA733A
fQ13	46367001	2SA1115
	or 46367201	2SA1048
	or 46367401	2SA733A
•IC		
fIC1	46149500	MB8844-543M
fIC2	46160400	MB84049B
	or 46160500	TC4049BP
	or 46531000	μPD4049UBC
	or 48050400	MSM4049BRS
fIC3	46149600	BA6208
•Diode		
fD1	03117600	1S2473T

2-2. F-4734 Indicator Circuit Board

Component Side


LD5
LD4
LD3
LD2
LD1
INDICATOR(9)
LD6
45
33
SPEED
30
SIZE
17
S5
S4
S3
REPEAT
UP
/DOWN
S2
START
/STOP
S1
4734-F

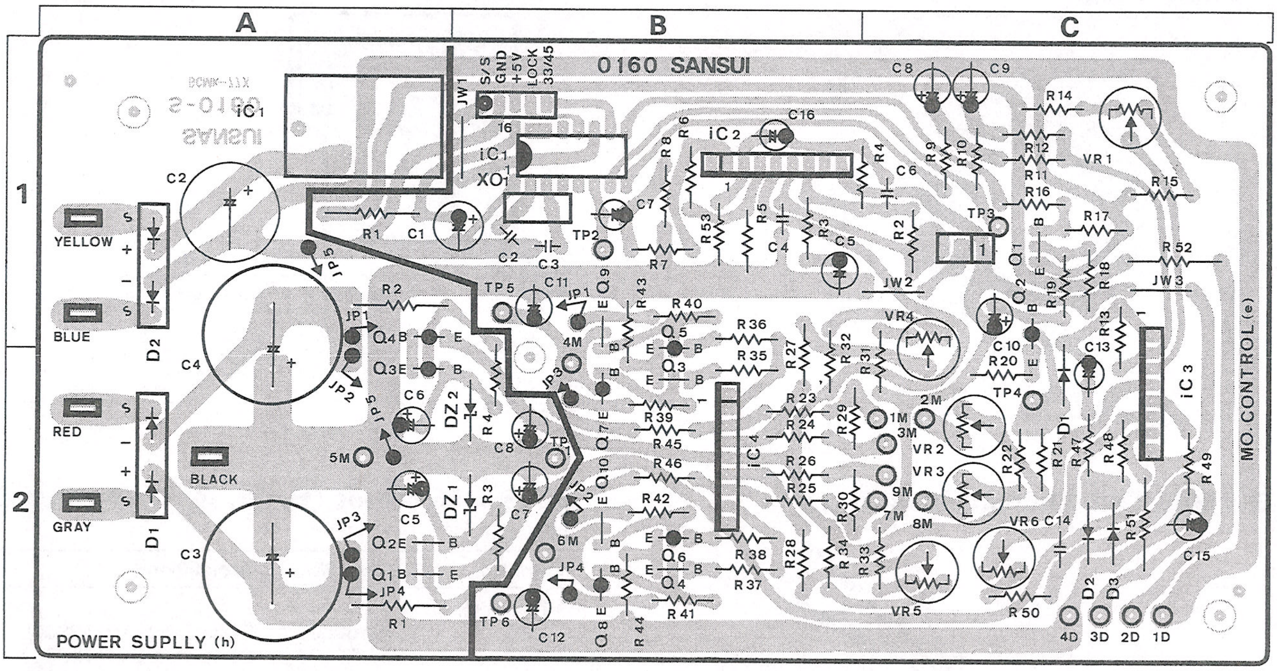
Parts List

Parts No.	Stock No.	Description
•LED		
gLD1	46273900	SEL1123R
gLD2	46273900	SEL1123R
gLD3	46273900	SEL1123R
gLD4	46273900	SEL1123R
gLD5	46273900	SEL1123R
gLD6	46422400	SLB15PG5
	or 48159700	SEL1323G

Parts No.	Stock No.	Description
gSW1	46549500	Push SW., START/STOP
gSW2	46549500	Push SW., UP/DOWN
gSW3	46549500	Push SW., REPEAT
gSW4	46549500	Push SW., SIZE
gSW5	46549500	Push SW., 33/45

2-3. S-0160 DD Motor Control Circuit Board (Stock No. 00844601)

Component Side

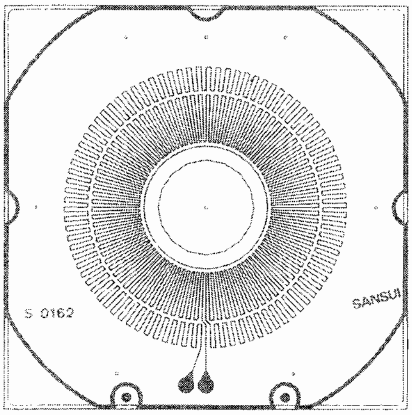

A
B
C
1
2
0160 SANSUI
S-0160
SANSUI
S/S
GND
+5V
LOCK
33/45
JW1
iC1
XO1
iC2
iC3
iC4
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
C15
C16
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
R19
R20
R21
R22
R23
R24
R25
R26
R27
R28
R29
R30
R31
R32
R33
R34
R35
R36
R37
R38
R39
R40
R41
R42
R43
R44
R45
R46
R47
R48
R49
R50
R51
R52
R53
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
D1
D2
D3
DZ1
DZ2
VR1
VR2
VR3
VR4
VR5
VR6
TP1
TP2
TP3
TP4
TP5
TP6
JP1
JP2
JP3
JP4
JP5
JW2
JW3
1M
2M
3M
4M
5M
6M
7M
8M
9M
4D
3D
2D
1D
YELLOW
BLUE
RED
BLACK
GRAY
POWER SUPLLY (h)
MO. CONTROL (e)

Parts List

Parts No.	Stock No.	Description
•Transistor		
eQ1	07194801	2SC1815
	or 03059501	2SC945
	or 07299701	2SC2603
eQ2	07194701	2SA1015
	or 07197001	2SA733A
	or 07299601	2SA1115
eQ3	07194801	2SC1815
	or 03059501	2SC945
	or 07299701	2SC2603
eQ4	07194801	2SC1815
	or 03059501	2SC945
	or 07299701	2SC2603
eQ5	07194701	2SA1015
	or 07197001	2SA733A
	or 07299601	2SA1115
eQ6	07194701	2SA1015
	or 07197001	2SA733A
	or 07299601	2SA1115
eQ7	46149301	2SB744
eQ8	46149301	2SB744
eQ9	46149401	2SD794
eQ10	46149401	2SD794
•IC		
eIC1	46146400	TC9142P
eIC2	46147700	M5218L
	or 46087100	NJM4558S
	or 46146500	BA715
eIC3	46147700	M5218L
eIC4	46147700	M5218L
	or 46087100	NJM4558S
	or 46146500	BA715
eX01	46159700	5.5296MHz Quarts Element
•Diode		
eD1	03111600	1S2473D
eD2	03111600	1S2473D
eD3	03111600	1S2473D
⚠eR1	00175000	2.2Ω 1/2W N.I.R.
eR14	00207900	39kΩ 1/4W M.R.
eR15	00210800	6.8kΩ 1/4W M.R.
eC5	00304300	10μF 16V E.B.
eC7	00305800	2.2μF 25V E.B.
eC11	00307000	2.2μF 50V E.B.
eC12	00307000	2.2μF 50V E.B.
eC13	00304300	10μF 16V E.B.
eC15	00305800	2.2μF 25V E.B.
eC16	00305800	2.2μF 25V E.B.
eVR1	10342700	10kΩ B S.V.R., PLL Adj.
eVR2	10350900	2.2kΩ B S.V.R., Balance Adj.
eVR3	10350900	2.2kΩ B S.V.R., Balance Adj.
eVR4	10350900	2.2kΩ B S.V.R., OFF Set Adj.
eVR5	10350900	2.2kΩ B S.V.R., OFF Set Adj.
eVR6	10352500	1MΩ B S.V.R., SSRS Gain Adj.
•Transistor		
⚠hQ1	46149401	2SD794
⚠hQ2	07194801	2SC1815
⚠	or 03059501	2SC945
⚠	or 07299701	2SC2603
⚠hQ3	07194701	2SA1015
⚠	or 07197001	2SA733A
⚠	or 07299601	2SA1115
⚠hQ4	46149301	2SB744
•IC		
⚠hIC1	07183500	μPC78M05H
⚠	or 46144200	NJM78M05A
•Diode		
⚠hD1	03117000	RB-152
⚠hD2	03117000	RB-152
•Zener Diode		
hDZ1	03159900	EQA01-15R
hDZ2	03159900	EQA01-15R
⚠hR1	00172500	10Ω 1/2W N.I.R.
⚠hR2	00172500	10Ω 1/2W N.I.R.

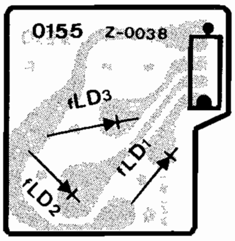
2-4. S-0162 F.G. Circuit Board

Component Side


S 0162
SANSUI

2-6. S-0155 L.E.D. (Sensor Ⓐ, Ⓑ, Ⓒ) Circuit Board

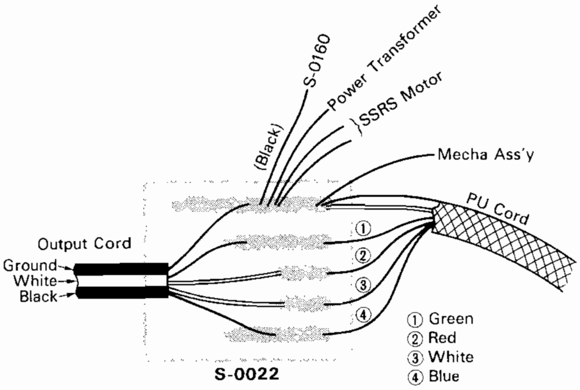
Component Side


0155
Z-0038
fLD3
fLD1
fLD2

Parts List

Parts No.	Stock No.	Description
fLD1	46150400	LED TLR121
fLD2	46150400	LED TLR121
fLD3	46150400	LED TLR121

2-5. S-0022 P.U. Output Circuit Board

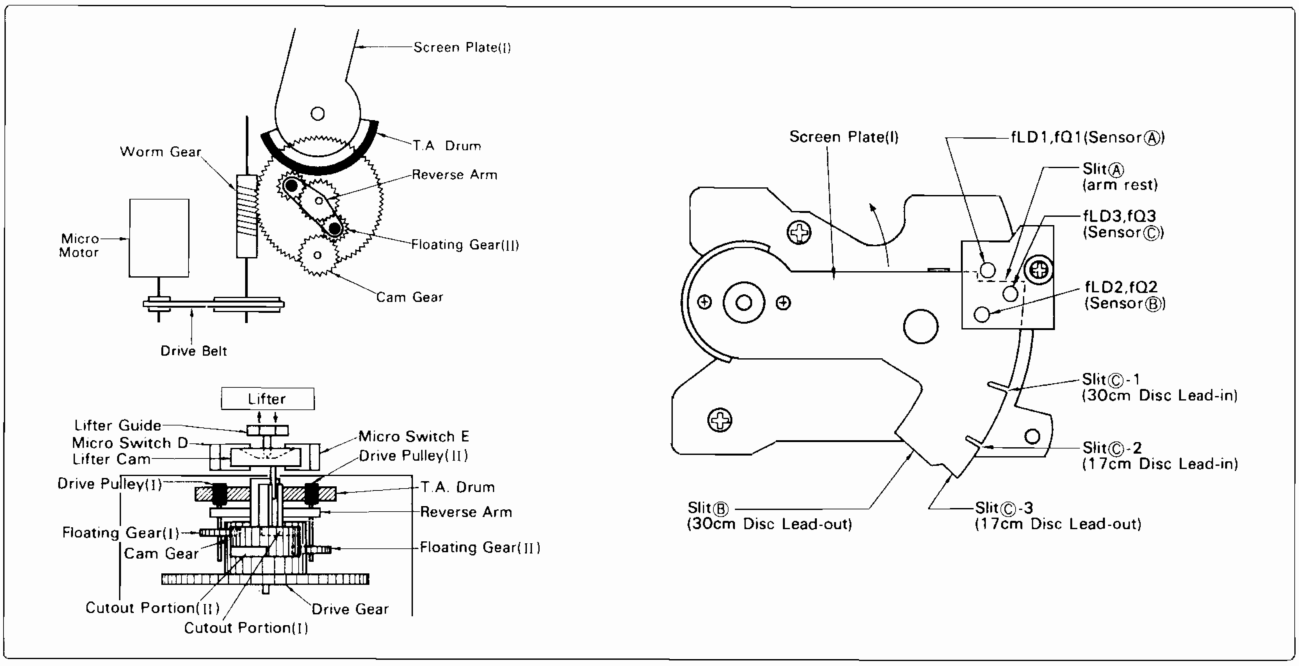

S-0160
Power Transformer
SSRS Motor
(Black)
Mecha Ass'y
PU Cord
Output Cord
Ground
White
Black
①
②
③
④
S-0022
① Green
② Red
③ White
④ Blue

2-7. S-0156 Sensor Ⓐ, Ⓑ, Ⓒ Circuit Board

Parts List

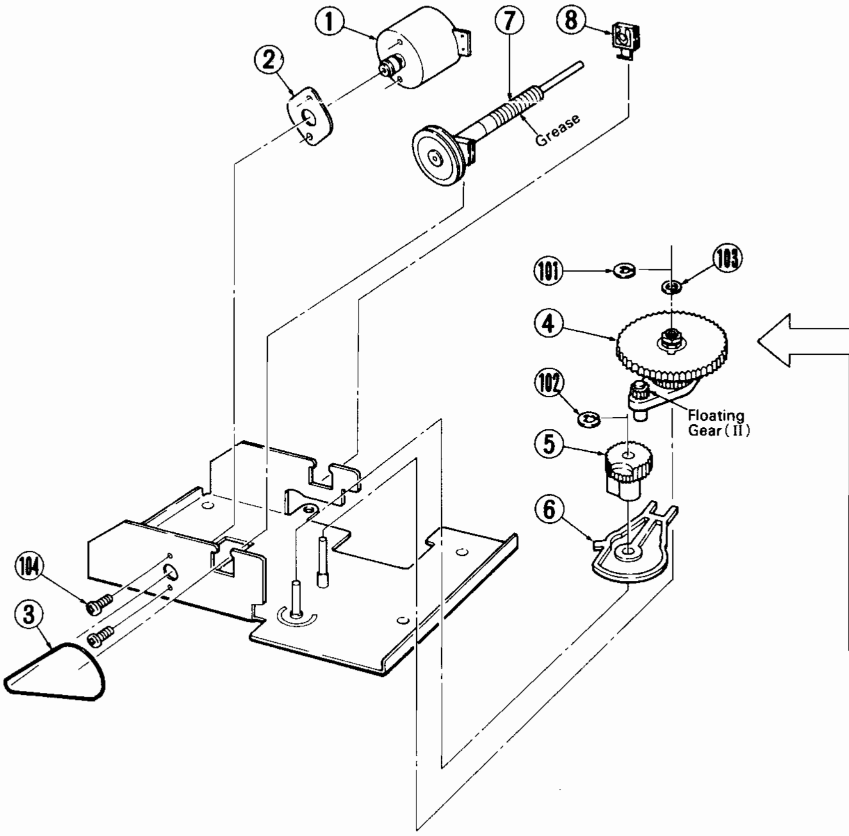
Parts No.	Stock No.	Description
• Transistor		
fQ1	46160000	Photo Transistor TPS605
fQ2	46160000	Photo Transistor TPS605
fQ3	46160000	Photo Transistor TPS605

•STRUCTURE OF MECHANISM Ass'y


Screen Plate(I)
T.A. Drum
Worm Gear
Reverse Arm
Micro Motor
Floating Gear(II)
Cam Gear
Drive Belt
Lifter
Lifter Guide
Micro Switch D
Lifter Cam
Micro Switch E
Drive Pulley(II)
Drive Pulley(I)
T.A. Drum
Reverse Arm
Floating Gear(I)
Cam Gear
Floating Gear(II)
Cutout Portion(II)
Drive Gear
Cutout Portion(I)
Screen Plate(I)
fLD1,fQ1(SensorⒶ)
SlitⒶ
(arm rest)
fLD3,fQ3
(SensorⒸ)
fLD2,fQ2
(SensorⒷ)
SlitⒸ-1
(30cm Disc Lead-in)
SlitⒸ-2
(17cm Disc Lead-in)
SlitⒷ
(30cm Disc Lead-out)
SlitⒸ-3
(17cm Disc Lead-out)

3. EXPLODED VIEW & PARTS LIST OF MECHANISM Ass'y

Fig. 3-1


1
2
7
8
Grease
101
103
4
102
Floating Gear (II)
5
6
104
3

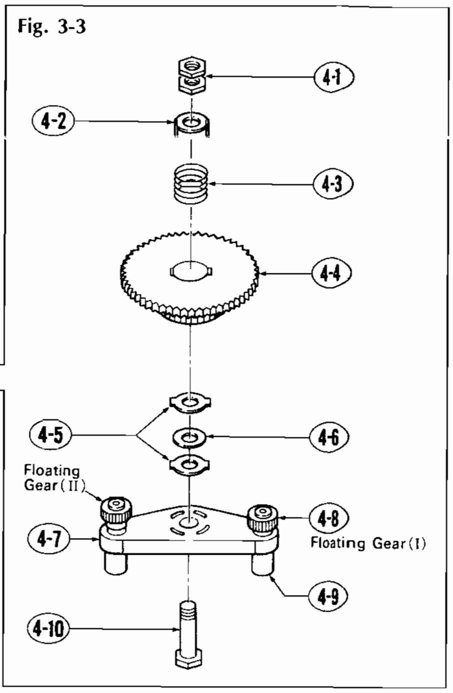
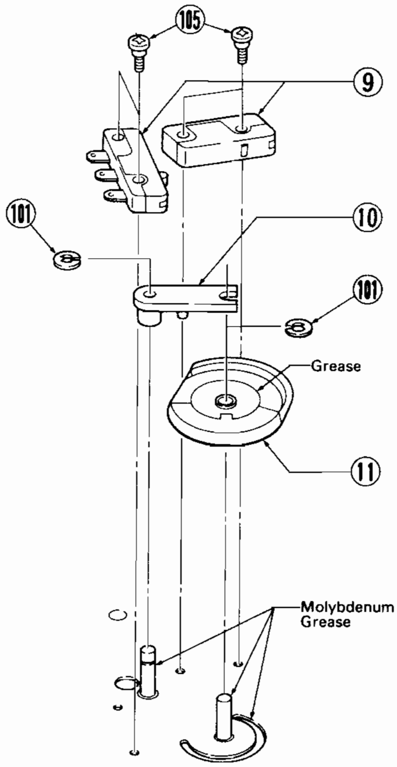


Fig. 3-3
4-1
4-2
4-3
4-4
4-5
4-6
Floating Gear (II)
4-7
4-8
Floating Gear (I)
4-9
4-10

Fig. 3-2


105
9
101
10
101
Grease
11
Molybdenum Grease

Parts List

Parts No.	Stock No.	Description
1	48169800	Micro Motor
2	55029810	Rubber Cushion
3	60322310	Drive belt
4	13110700	Drive Gear Ass'y
4-1	———	Hexagon Nuts
4-2	———	Holding Plate
4-3	———	Compression Spring
4-4	———	Drive Gear
4-5	———	Friction Plate
4-6	———	Friction Disc
4-7	———	Reverse Arm
4-8	———	Floating Gear
4-9	———	Drive Pulley
4-10	———	Boss
5	13082710	Cam Gear
6	13081920	Cam Spring
7	18036100	Worm Gear Ass'y
8	13083700	Bearing Holding
9	11602700	Micro Switch
10	13083900	Lifter Guide
11	13083110	Lifter Cam
•Washer & Screw		
101	08322600	2.5ø E-Type Washer
102	00489200	3ø E-Type Washer
103	51821600	3ø Thrust Washer
104	00436500	M2 × 4 Pan Head Screw
105	13113200	M2 × 10 Pan Head SEMS A

4. ADJUSTMENTS

4-1. Adjustment of Screen Plate Installation Position

Adjust the position whenever the tonearm is replaced. With the tonearm placed on the arm rest, install the screen plate to the tonearm shaft, as shown in Figs. 4-1 and 4-2.

Fig. 4-1 Installation of Screen Plate

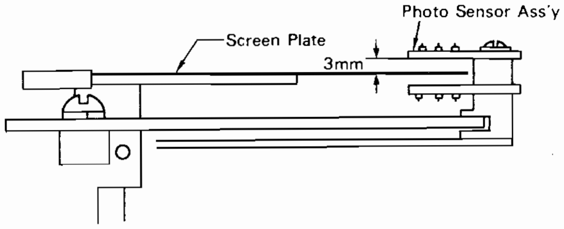
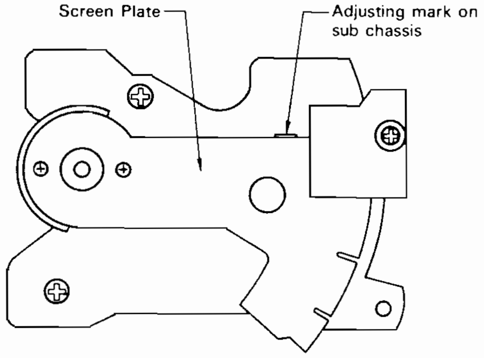


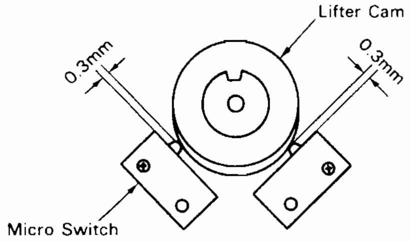
Fig. 4-2 Bottom View of Screen Plate



4-2. Adjustment of Micro Switch Position

When the micro switch is replaced, adjust its position as shown in Fig. 4-3.

Fig. 4-3



4-3. Lead-in Position Adjustment

1) Confirm that the screen plate is installed as shown in Fig. 4-1 & 4-2.
2) Turn the adjusting cam (See Top View on Page 8) so as to lower the stylus to the middle of lead-in groove.

4-4. Adjustment of Motor Control Section

A. Adjustment of motor control circuit

(See Bottom View on page 8)

Presetting

1. Turn power switch on.
2. No platter revolution.

EQUIPMENT	MESURE OUTPUT	ADJUST FOR	ADJUST
DC volt meter	TP5 (S-0160)	0V	eVR4 (S-0160)
Same as above	TP6 (S-0160)	0V	eVR5 (S-0160)

B. Gain adjustment of motor drive circuit

(See Bottom View on page 8)

Presetting

1. Turn the platter with 33-1/3 or 45 rpm speed.

EQUIPMENT	MESURE OUTPUT	ADJUST FOR	ADJUST	REMARKS
DC volt meter	TP5 (S-0160)	+18V	eVR2 (S-0160)	Brake the platter with hand to make it almost stop but a little revolution.
Same as above	TP6 (S-0160)	+18V	eVR3 (S-0160)	

*Connect a 1S2473D diode to positive lead.

C. PLL output adjustment (See Bottom View on page 8)

Presetting

1. Play 30cm-dia. disc with 33-1/3 rpm speed.

EQUIPMENT	MESURE OUTPUT	ADJUST FOR	ADJUST
DC volt meter	TP3 (S-0160)	1.8V	eVR1 (S-0160)

D. Silent synchrotor system adjustment (NF resistance adjustment on eIC$_4$b) (See Top View on page 8)

Presetting

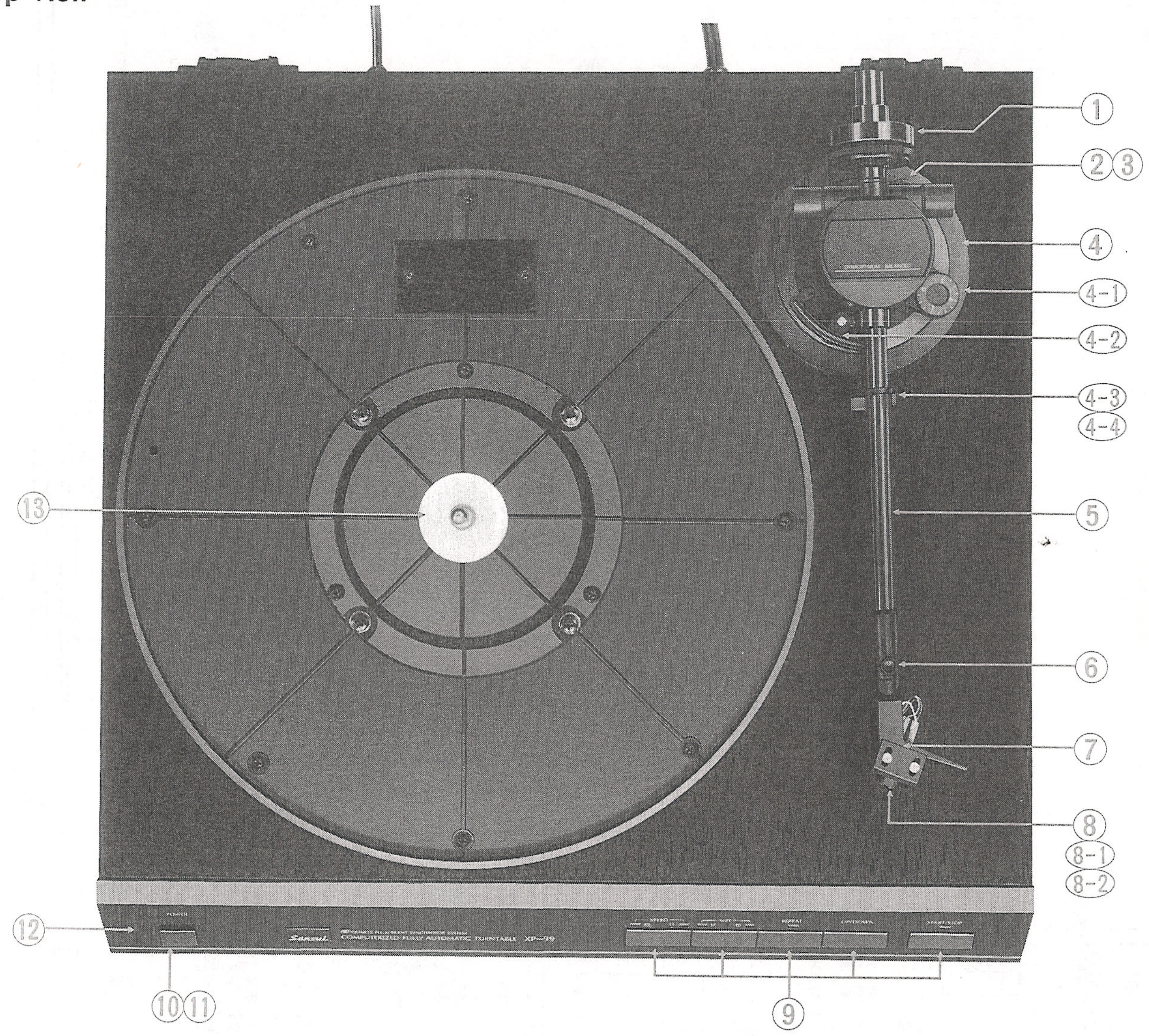
1. Turn power switch off.
2. Remove the connector for SSRS motor from S-0160.

EQUIPMENT	MESURE OUTPUT	ADJUST FOR	ADJUST	REMARKS
Resistance meter (Multi meter)	Between 3D terminal (red) of connector for SSRS motor and eR50 (Point B of bottom view on page 8)	150kΩ	eVR6 (S-0160)	Higher voltage lead must be connected to 3D.

•Return the SSRS connector to S-0160 P.C.B., and turn the platter with 33-1/3 rpm speed. Measure both ripple voltages apply to TP4 and 3D terminal with scope, and confirm that the 3D terminal voltage is about 24 dB more than TP4 voltage.

5. OTHER PARTS

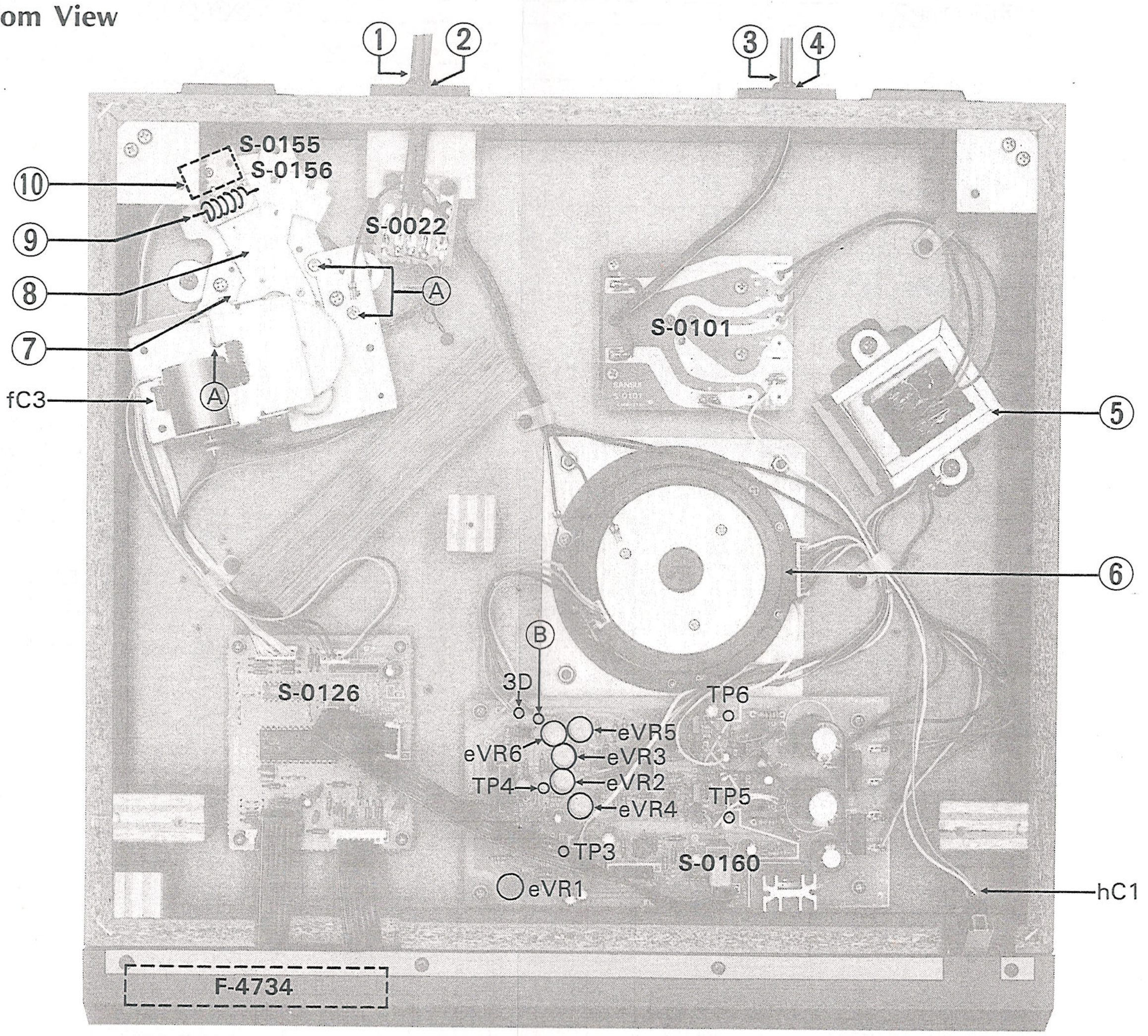
5-1. Top View


①
②③
④
④-1
④-2
④-3
④-4
⑤
⑥
⑦
⑧
⑧-1
⑧-2
⑬
⑫
⑩⑪
⑨

Parts List

Parts No.	Stock No.	Description
1	13731300	Main Weight Ass'y
2	13089100	Knob, Adjusting Cam
3	13083320	Adjusting Cam
4	13731400	Arm Base Ass'y
4-1	13731500	IFC Ass'y
4-2	13207100	Lifter Plate Ass'y
4-3	13107400	Arm Rest Ass'y
4-4	13731600	Arm Rest Base
5	13731200	Tone Arm Ass'y
6	13731700	Head Shell Mounting Screw
7	13731800	Head Shell Ass'y
8	13205700	Cartridge Ass'y, AT-3100S
8-1	13205810	Stylus, ATN-3100S
8-2	13207400	Screw Ass'y
9	46549500	Push SW., START/STOP, UP/DOWN, REPEAT, SIZE, SPEED
10	13703900	Knob, POWER
⚠ 11	46413900	Push SW., POWER
12	47687100	Front Panel Ass'y
13	18047200	DD Motor Ass'y (Incl. S-0160 Circuit Board

5-2. Bottom View

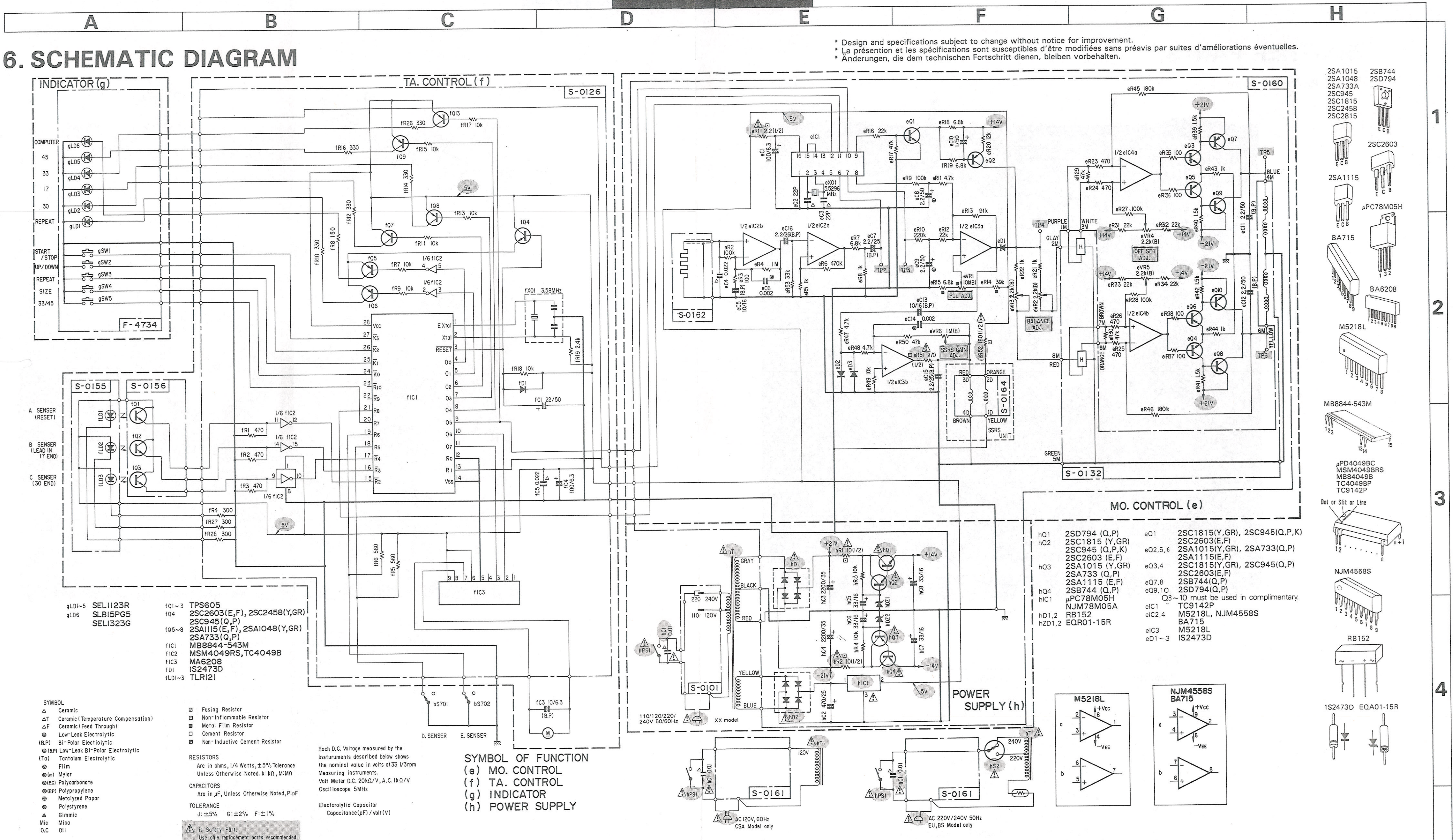

①
②
③
④
⑩
S-0155
S-0156
⑨
⑧
⑦
fC3
S-0022
Ⓐ
Ⓐ
S-0101
⑤
⑥
Ⓑ
3D
S-0126
TP6
eVR5
eVR6
eVR3
TP4
eVR2
eVR4
TP5
TP3
S-0160
eVR1
hC1
F-4734

Parts List

Parts No.	Stock No.	Description
1	38103610	P.U. Output Cord
2	39104900	Strain Relief
⚠ 3	38004700	Power Supply Cord (XX, CSA)
⚠	38004500	Power Supply Cord (EU)
⚠	38004300	Power Supply Cord (BS)
4	39106000	Strain Relief (XX, CSA)
	39104900	Strain Relief (EU, BS)
⚠ 5	15005401	Power Transformer (XX)
⚠	15005402	Power Transformer (CSA)
⚠	15005405	Power Transformer (EU, BS)
6	18047100	SSRS Motor
7	13083810	TA Drum
8	47710700	Screen Plate
9	69034200	Spring
10	13083400	Screen Plate (S), S-0156
fC3	00302500	10μF 6.3V E.B.
⚠hC1	46425800	0.01μF 400V C.C.
—	13202200	Insulator

6. SCHEMATIC DIAGRAM

* Design and specifications subject to change without notice for improvement.
* La présention et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.


A
B
C
D
E
F
G
H
1
2
3
4
5
INDICATOR (g)
TA. CONTROL (f)
MO. CONTROL (e)
POWER SUPPLY (h)
S-0126
S-0160
S-0162
S-0164
S-0132
S-0155
S-0156
S-0101
S-0161
F-4734
COMPUTER
45
33
17
30
REPEAT
START /STOP
UP/DOWN
REPEAT
SIZE
33/45
A SENSER (RESET)
B SENSER (LEAD IN 17 END)
C SENSER (30 END)
D. SENSER
E. SENSER
bS701
bS702
fIC1
fIC3
fX01 3.58MHz
eIC1
eX01 3.5296 MHz
PLL ADJ.
OFF SET ADJ.
BALANCE ADJ.
SSRS GAIN ADJ.
SSRS UNIT
TP1
TP2
TP3
TP4
TP5
TP6
+21V
-21V
+14V
-14V
5V
AC 120V,60Hz CSA Model only
AC 220V/240V 50Hz EU,BS Model only
110/120/220/240V 50/60Hz
XX model
M5218L
NJM4558S BA715
2SA1015 2SA1048 2SA733A 2SC945 2SC1815 2SC2458 2SC2815
2SB744 2SD794
2SC2603
2SA1115
µPC78M05H
BA715
BA6208
M5218L
MB8844-543M
µPD4049BC MSM4049BRS MB84049B TC4049BP TC9142P
Dot or Slit or Line
NJM4558S
RB152
1S2473D EQA01-15R

gLD1~5	SEL1123R
gLD6	SLB15PG5 SEL1323G

fQ1~3	TPS605
fQ4	2SC2603(E,F), 2SC2458(Y,GR) 2SC945(Q,P)
fQ5~8	2SA1115(E,F), 2SA1048(Y,GR) 2SA733(Q,P)
fIC1	MB8844-543M
fIC2	MSM4049RS,TC4049B
fIC3	MA6208
fD1	1S2473D
fLD1~3	TLR121

hQ1	2SD794 (Q,P)
hQ2	2SC1815 (Y,GR) 2SC945 (Q,P,K) 2SC2603 (E,F)
hQ3	2SA1015 (Y,GR) 2SA733 (Q,P) 2SA1115 (E,F)
hQ4	2SB744 (Q,P)
hIC1	µPC78M05H NJM78M05A
hD1,2	RB152
hZD1,2	EQR01-15R

eQ1	2SC1815(Y,GR), 2SC945(Q,P,K) 2SC2603(E,F)
eQ2,5,6	2SA1015(Y,GR), 2SA733(Q,P) 2SA1115(E,F)
eQ3,4	2SC1815(Y,GR), 2SC945(Q,P) 2SC2603(E,F)
eQ7,8	2SB744(Q,P)
eQ9,10	2SD794(Q,P)

Q3~10 must be used in complimentary.

eIC1	TC9142P
eIC2,4	M5218L, NJM4558S BA715
eIC3	M5218L
eD1~3	1S2473D

SYMBOL

△	Ceramic
△T	Ceramic (Temperature Compensation)
△F	Ceramic (Feed Through)
⊖	Low-Leak Electrolytic
(B.P)	Bi-Polar Electlolytic
⊖(B.P)	Low-Leak Bi-Polar Electrolytic
(Ta)	Tantalum Electrolytic
◎	Film
◎(m)	Mylar
◎(P.C)	Polycarbonate
◎(P.P)	Polypropylene
◉	Metalyzed Papar
⊗	Polystyrene
▲	Gimmic
Mic	Mica
O.C	Oil

☒	Fusing Resistor
⊡	Non-Inflammable Resistor
■	Metal Film Resistor
☐	Cement Resistor
▨	Non-Inductive Cement Resistor

RESISTORS
Are in ohms, 1/4 Watts, ±5% Tolerance
Unless Otherwise Noted. k: kΩ, M: MΩ

CAPACITORS
Are in µF, Unless Otherwise Noted, P: pF

TOLERANCE
J: ±5% G: ±2% F: ±1%

⚠ is Safety Part.
Use only replacement parts recommended by the manufacturer.

Each D.C. Voltage measured by the insturuments described below shows the nominal value in volts at 33 1/3rpm
Measuring instruments.
Volt Meter D.C. 20kΩ/V, A.C. 1kΩ/V
Oscilloscope 5MHz

Electorolytic Capacitor
Capacitance(µF) / Volt(V)

SYMBOL OF FUNCTION
(e) MO. CONTROL
(f) TA. CONTROL
(g) INDICATOR
(h) POWER SUPPLY

•fIC3 BA6208

A IN	B IN	A OUT	B OUT
3 pin	2 pin	8 pin	7 pin
1	0	H	L
0	1	L	H
1	1	L	L
0	0	open	open

Input Level
1>2.0V
0<0.8V

7. MAIN PARTS REPLACEMENT

7-1. How to remove the mechanical assembly

(See bottom view on Page 8)

1) Set the arm lifter at the down position.
2) Remove the bottom plate.
3) Unscrew three Ⓐ screws fastening the mechanical assembly, and pull the mechanical assembly toward the front side.

- When installing the mechanical assembly, pull the arm lifter upward.

7-2. How to replace the tone-arm

(See bottom view on Page 8)

1) Remove the mechanical assembly in accordance with the procedures as stated under 7-1 above.
2) Remove the cords connected to the S-0022 circuit board.
3) Loosen a screw fastening the screen plate by using a 1.5 mm-hexagon wrench to remove the slit plate.
4) Unscrew a nut fastening the tone-arm assembly.

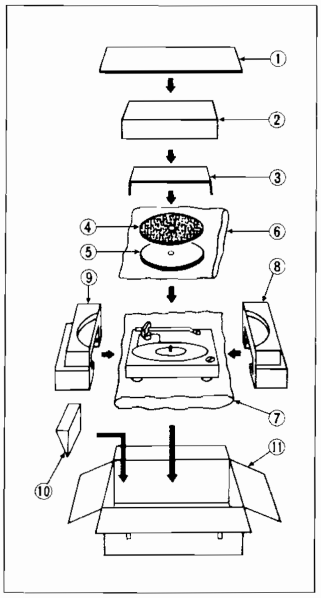
7-3. How to replace driver gear assembly ④ and the precautions (See Fig. 3-1 on Page 6)

1) Remove the mechanical assembly in accordance with the procedures as stated under 7-1.
2) Remove the E-ring 101 to remove the driver gear assembly ④.

- When installing the drive gear assembly ④, use care to geared positions of the floating gears I and II. (See Figs. 3-1 and 3-3, on Page 6).

8. PACKING LIST

Parts No.	Stock No.	Description
1	———	Protector Board, upper
2	47712000	Dust Cover Ass'y
3	———	Protector Board, platter
4	13184300	Turntable Sheet
5	47711900	Turntable Platter
6	91166000	Polyethylene Bag, turntable platter
7	13126300	Polyethylene Bag, turntable unit
8	47711300	Styrofoam Packing, front
9	47711500	Styrofoam Packing, rear
10	———	Accessory Box
11	47711100	Carton Case



9. ACCESSORY LIST

Stock No.	Description
13731300	Main Weight Ass'y
13012300	EP Adaptor
13731800	Head Shell Ass'y
46963500	Operating Instruction
13205700	Cartridge Ass'y, AT-3100S
13205810	Stylus, ATN-3100S
48149100	Auto-Hinge, dust cover

•**Note:** There are two types of unit in XP-99.
1) The unit with a cartridge
2) The unit without a cartridge
The mark E is stamped on the side of carton case.
• In partticular area, either type of these unit is sold.

Sansui

SANSUI ELECTRIC CO., LTD.: 14-1, Izumi 2-chome, Suginami-ku, Tokyo 168 Japan
PHONE: (03) 324-8891/TELEX: 232-2076 (International Division)
SANSUI ELECTRONICS CORPORATION: 1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.
17150 South Margay Ave. Carson, California 90746 U.S.A.
3036 Koapaka Street. Honolulu, Hawaii 96819 U.S.A.
SANSUI ELECTRONICS (U.K.) LTD.: Unit 10A, Lyon Industrial Estate, Rockware Avenue, Geenford, Middx UB6, OAA, England
SANSUI ELECTRONICS G.M.B.H.: Pau Ehrich Strasse 8, 6074 Rödermark 2, West Germany

(SM1-196) Printed in Japan (840420M) <Stock No. 36511300>